Dynamics Experiment (HyCODE; see website www.opl.ucsb.edu) program have been conducted in three locations: New Jersey shelf (at the Long-term Ecological Observatory site [LEO-15]), west Florida shelf (as part of Ecology and Oceanography of Harmful Algal Blooms [ECOHAB]), and Lee Stocking Island of the Bahamas (as part of Coastal Benthic Optical Properties [CoBOP]). One of the central goals of the program is to develop ocean color algorithms for remote sensing of the coastal ocean. Some other objectives include understanding of visibility, the relation of IOPs to AOPs, and the relationships between optical properties and physical, biological, geological, and chemical processes. Other goals are to develop radiative transfer models of the subsurface light field and optical measurement techniques for coastal benthic environments. Each of the HyCODE studies is summarized below.

New Jersey Shelf (LEO-15)

Several bio-optical instruments were deployed on a nearshore profiling node (about 5 km offshore; 15 m water depth), an optical tripod near the node, and a mid-shelf mooring and bottom tripod (about 25 km offshore; 24 m water depth) on the New Jersey shelf (LEO-15 site; Figure 7) for time series measurements in summer 2000 and 2001 (May-September). Optical instruments on the profiling node (a moored platform connected to a positively buoyant instrument package by an electro-optic cable) include an ac-9, HydroScat-6 for backscattering at 6 wavelengths and fluorescence at 2 wavelengths, fluorometer, optical backscatterer, LISST-100, and a bioluminescence profiler. Profiles were taken every half-hour, with an ascent/descent rate of about 2.5 m min^{-1}. LISST-100, LISST-ST, MSCAT, and fluorometer instruments were deployed on the optical bottom tripod to investigate sediment characteristics near the ocean bottom. Bio-optical instruments on the mooring included (sampling rates in parentheses): ac-9s (once per hour), beam transmissometers (once per minute), fluorometers (once per minute) and a spectral fluorometer (SAFire; once per hour), PAR sensors (eight times per hour), and a HydroScat-6 (once every 2 hours).

Processes on the New Jersey shelf are similar to those found at the CMO site, however, waters are more turbid and river and estuarine flows and upwelling fronts are more important at the LEO-15 site. Also, decorrelation time scales are shorter in the shallower waters at LEO-15; bio-optical parameters exhibit 1 to 3 day decorrelation scales from nearshore to mid-shelf. Time series measurements of spectral absorption at the mid-shelf mooring show that CDOM, possibly from the Hudson River outflow, dominated optical signals in late-spring 2000 (Figure 7). In summer 2000, a persistent front separated the lower salinity, more turbid waters nearshore from more saline, relatively clearer waters at mid-shelf. Mid-shelf total absorption was dominated by phytoplankton and CDOM, each accounting for roughly 50% of all absorbing materials at 440 nm. On the other hand, nearshore absorption was mainly influenced by particulate material (~70% of absorbing material) as compared to CDOM (~30%). A coastal jet was observed between July 22 and July 25, 2000. This coastal jet originated from an upwelling center north of the LEO-15 site. It was a relatively fast, southward moving, low temperature, high salinity, low particulate/biomass water mass, which extended approximately 5-10 km offshore, and was about 8-15 m deep. The effects of this jet can be seen in both nearshore and mid-shelf optical and biological variability. The coastal jet resulted in shoaling of the chlorophyll *a* maximum from depths of 16 to 10 m at the mid-shelf mooring. Noticeable increases in chlorophyll *a*, absorption, and attenuation at mid-shelf occurred during the time period of the jet due to advection of lower salinity, higher biomass nearshore waters to the mid-shelf region by the coastal jet. More details on HyCODE/LEO-15 results are given by Chang et al. (2001) and on website www.opl.ucsb.edu.

Coastal Benthic Optical Properties (CoBOP) and West Florida Shelf

Portable optical moorings were deployed in the optically shallow waters at the CoBOP Lee Stocking Island site for time series measurements spanning approximately 2-3 weeks (Maffione, personal communication). Instruments were deployed to measure downwelling and upwelling irradiance at the ocean bottom and at the surface to calculate bottom and surface reflectance, respectively. Supporting optical measurements were made with HydroScat-2s (for backscattering and fluorescence at 2 wavelengths), and a-betas and c-betas (for absorption and attenuation, and scattering by difference). Similar moorings were deployed on the west Florida shelf, but for periods of about two months, also as part of HyCODE.

A fast-repetition-rate fluorometer (FRR) was placed on a benthic platform (waters less than 10 m deep) near a coral head of *M. faveolata* by Gorbunov et al. (2001) to investigate the diel variability of chlorophyll fluorescence yields and photosynthetic parameters in corals off Lee Stocking Island during January and May 1999. The results identified, for the first time, several biophysical mechanisms that optimize photosynthesis and provide photoprotection in symbiotic corals. For other results from CoBOP, see Mazel (this issue).

Bio-optical time-series data have also been collected off the coast of San Diego and off the coast of central California near Monterey. D. Lapota (personal communication) collected daily to monthly bioluminescence time-series for 2-3 years off of San Diego to San Clemente Island, southern California, using MOORDEXs, University of California at Santa Barbara (UCSB) designed bioluminescence profilers. Fluorometers and beam transmissometers were also